

# Comparisons of Job Characteristics

**Focus Occupation:** Computer Software Engineers, Systems Software (15-1032)

**Associated Occupation:** Computer Systems Analysts (15-1051)

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

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<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

## Knowledge

Similarity of Focus Occupation to Associated Occupation: 85

**Focus Occupation:** Computer Software Engineers, Systems Software (15-1032)

**Associated Occupation:** Computer Systems Analysts (15-1051)

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Computers and Electronics	8.4	19.3	23.1	>>	Current knowledge level is likely more than sufficient
Customer and Personal Service	11.3	15.4	11.8	<<	Extensive education and/or training may be required
Education and Training	9.2	13.2	6.8	<<	Extensive education and/or training may be required
Administration and Management	8.4	11.3	7.7	<<	Extensive education and/or training may be required
Engineering and Technology	5.7	11.0	14.6	>>	Current knowledge level is likely more than sufficient
Telecommunications	3.9	6.8	8.3	>	Current knowledge level is likely sufficient

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Skills

Similarity of Focus Occupation to Associated Occupation: 89

**Focus Occupation:** Computer Software Engineers, Systems Software (15-1032)

**Associated Occupation:** Computer Systems Analysts (15-1051)

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Systems Evaluation	6.4	12.7	10.7	<	A higher skill level may be required
Active Learning	8.7	12.6	10.7	<	A higher skill level may be required
Systems Analysis	6.5	12.6	10.2	<	A higher skill level may be required
Operations Analysis	5.0	10.6	12.0	>	Skill level is likely sufficient
Quality Control Analysis	5.9	10.3	8.7	<	A higher skill level may be required
Programming	2.2	10.2	12.6	>	Skill level is likely sufficient
Technology Design	2.6	9.7	8.1	<	A higher skill level may be required

Troubleshooting	4.5	8.9	4.1	<<	Extensive development of skills in this area may be required
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The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 96			
Focus Occupation: Computer Software Engineers, Systems Software (15-1032) Associated Occupation: Computer Systems Analysts (15-1051)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Deductive Reasoning	10.6	13.9	12.6	<	Some improvement in abilities may be required
Information Ordering	9.9	12.9	11.4	<	Some improvement in abilities may be required
Fluency of Ideas	7.6	12.7	8.8	<<	Extensive improvement in abilities may be required
Category Flexibility	9.0	11.8	9.7	<	Some improvement in abilities may be required
Originality	7.6	11.6	9.3	<	Some improvement in abilities may be required
Flexibility of Closure	7.8	10.4	6.6	<<	Extensive improvement in abilities may be required
Mathematical Reasoning	6.3	10.3	9.8	0	Current ability level may be sufficient
Speed of Closure	5.9	8.8	5.6	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 95
<b>Focus Occupation: Computer Software Engineers, Systems Software (15-1032)</b> <b>Associated Occupation: Computer Systems Analysts (15-1051)</b>		
Work Activities	Exclusivity of Activity	
Adjust computer operation system	84	
Communicate technical information	4	
Confer with management or users	76	
Consult with customers concerning needs	69	
Design computer hardware or software interface	87	
Design control systems	78	
Design data processing systems	92	
Design data security systems	89	
Design systems in cooperation with colleagues	84	
Develop or maintain databases	30	

Develop tables depicting data	33
Evaluate computer system user requests or requirements	81
Evaluate prototype computer software systems	89
Follow data security procedures	77
Follow data storage procedures	75
Make presentations	13
Prepare technical reports or related documentation	22
Program computers for electronic engineering applications	87
Program mainframe computer	84
Provide technical computer training	82
Recommend software or hardware purchases	85
Revise or correct errors in computer programs, software, or systems	85
Test computer programs or systems	78
Train workers in use of equipment	87
Use computer networking technology	81
Use computer programming language	82
Use computers to enter, access or retrieve data	3
Use knowledge of mainframe computers	78
Use project management techniques	47
Use spreadsheet software	18
Write computer software, programs, or code	84
Write documentation for computer programming	87
Write technical specifications for computer systems, software or applications	92

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Tools and Technologies that Both Occupations Have in Common

Similarity of Focus  
Occupation to Associated  
Occupation: 92

**Focus Occupation: Computer Software Engineers, Systems Software (15-1032)**  
**Associated Occupation: Computer Systems Analysts (15-1051)**

Tools and Technologies	Exclusivity
Business function specific software	1
Computers	1
Content authoring and editing software	1
Content management software	6
Data management and query software	1
Development software	4
Industry specific software	1
Network applications software	1
Network management software	37
Networking software	21
Operating environment software	12
Security and protection software	30
Utility and device driver software	17

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.